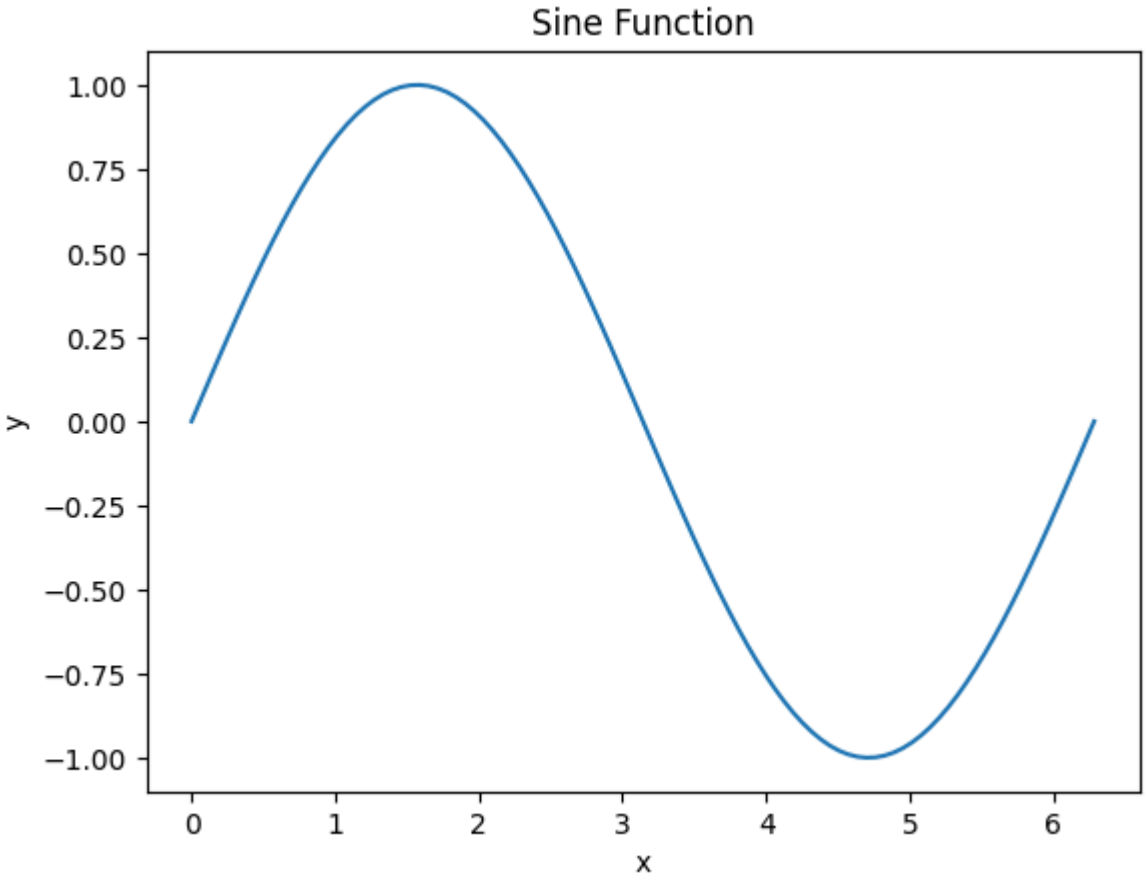
In [3]:
```
import numpy as np
import matplotlib.pyplot as plt
```

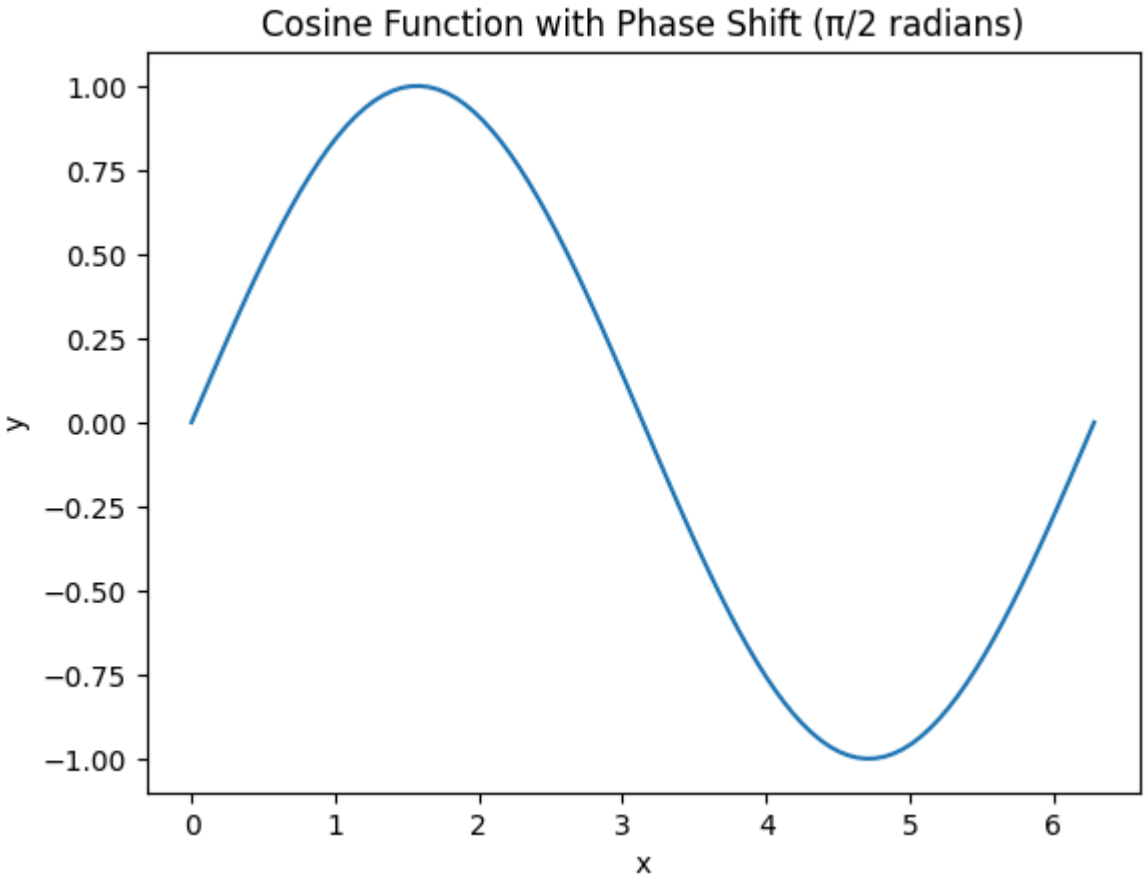
```
Matplotlib is building the font cache; this may take a moment.
```

In [4]:
```
import numpy as np
import matplotlib.pyplot as plt

# Generate data for x values
x = np.linspace(0, 2*np.pi, 100)

# Calculate y values for sine function
y = np.sin(x)

# Plot the sine function
plt.plot(x, y)

# Add title and axis labels
plt.title("Sine Function")
plt.xlabel("x")
plt.ylabel("y")

# Display the plot
plt.show()
```



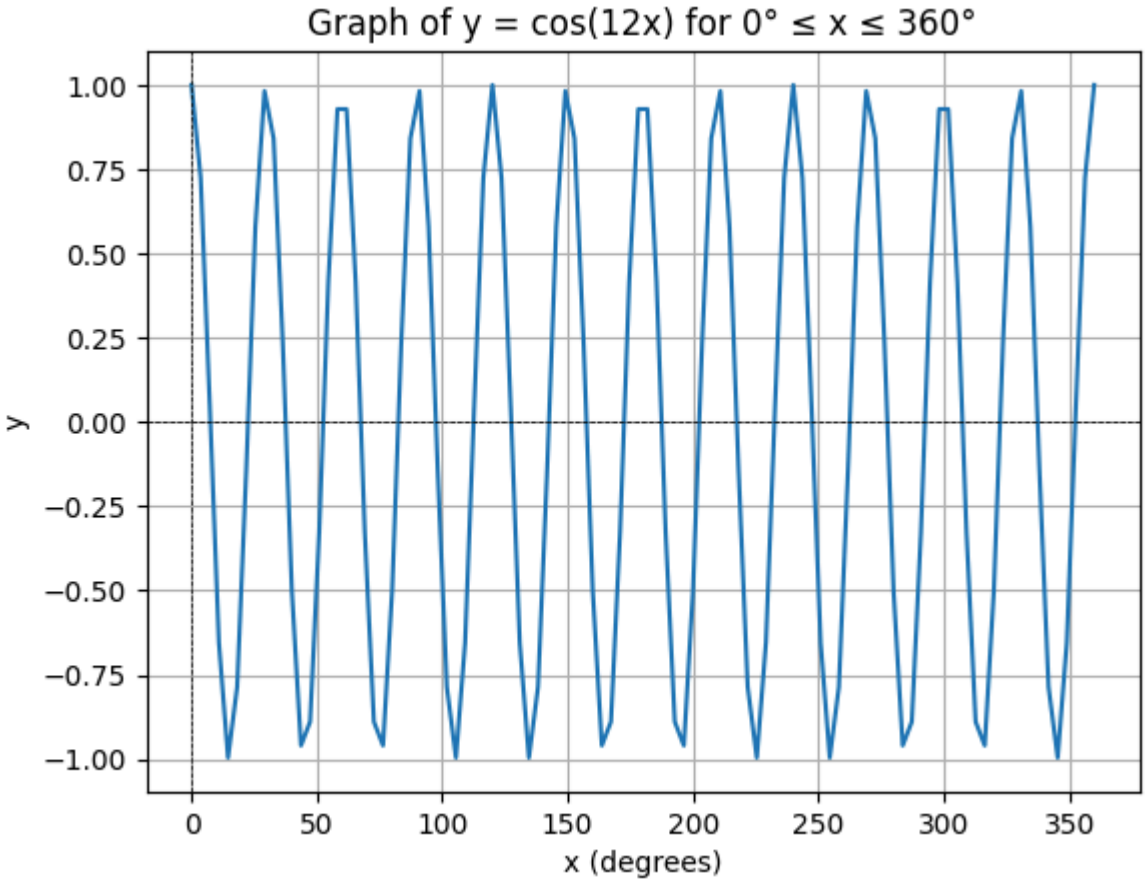
In [5]:
```
import numpy as np
import matplotlib.pyplot as plt

# Generate data for x values
x = np.linspace(0, 2*np.pi, 100)

# Calculate y values for cosine function with phase shift
y = np.cos(x - np.pi / 2)  # π/2 radians is equivalent to 90 degrees in the unit circle

# Plot the cosine function with phase shift
plt.plot(x, y)

# Add title and axis labels
```

```
plt.title("Cosine Function with Phase Shift (π/2 radians)")
plt.xlabel("x")
plt.ylabel("y")

# Display the plot
plt.show()
```



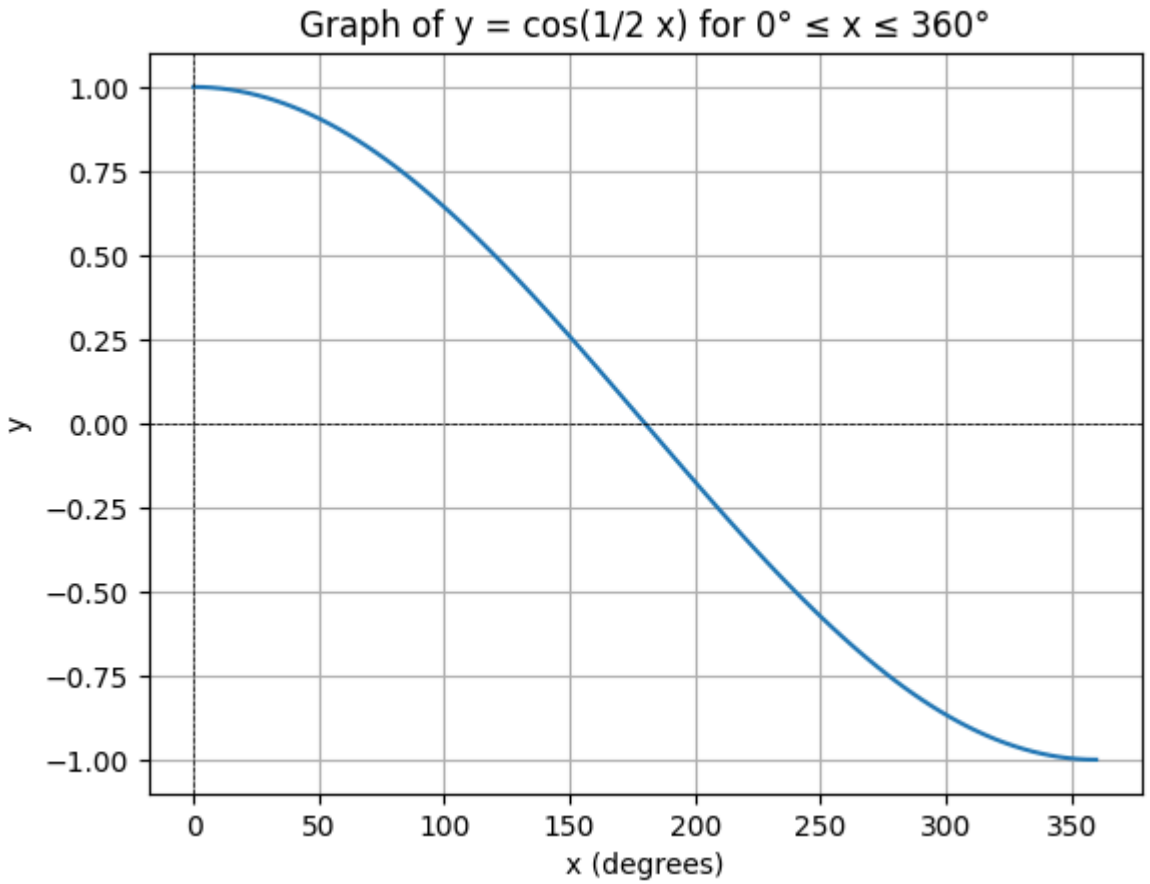
In [6]:
```
import numpy as np
import matplotlib.pyplot as plt

# Generate data for x values in degrees
x = np.linspace(0, 360, 100)
```

```
# Convert degrees to radians for the cosine function
x_radians = np.radians(x)

# Calculate y values for cosine function
y = np.cos(12 * x_radians)

# Plot the cosine function
plt.plot(x, y)

# Add title and axis labels
plt.title("Graph of y = cos(12x) for 0° ≤ x ≤ 360°")
plt.xlabel("x (degrees)")
plt.ylabel("y")

# Display the plot
plt.grid()  # Optional: Add a grid for better visibility
plt.axhline(0, color='black',linewidth=0.5, ls='--')  # Optional: Add x-axis
plt.axvline(0, color='black',linewidth=0.5, ls='--')  # Optional: Add y-axis
plt.show()
```

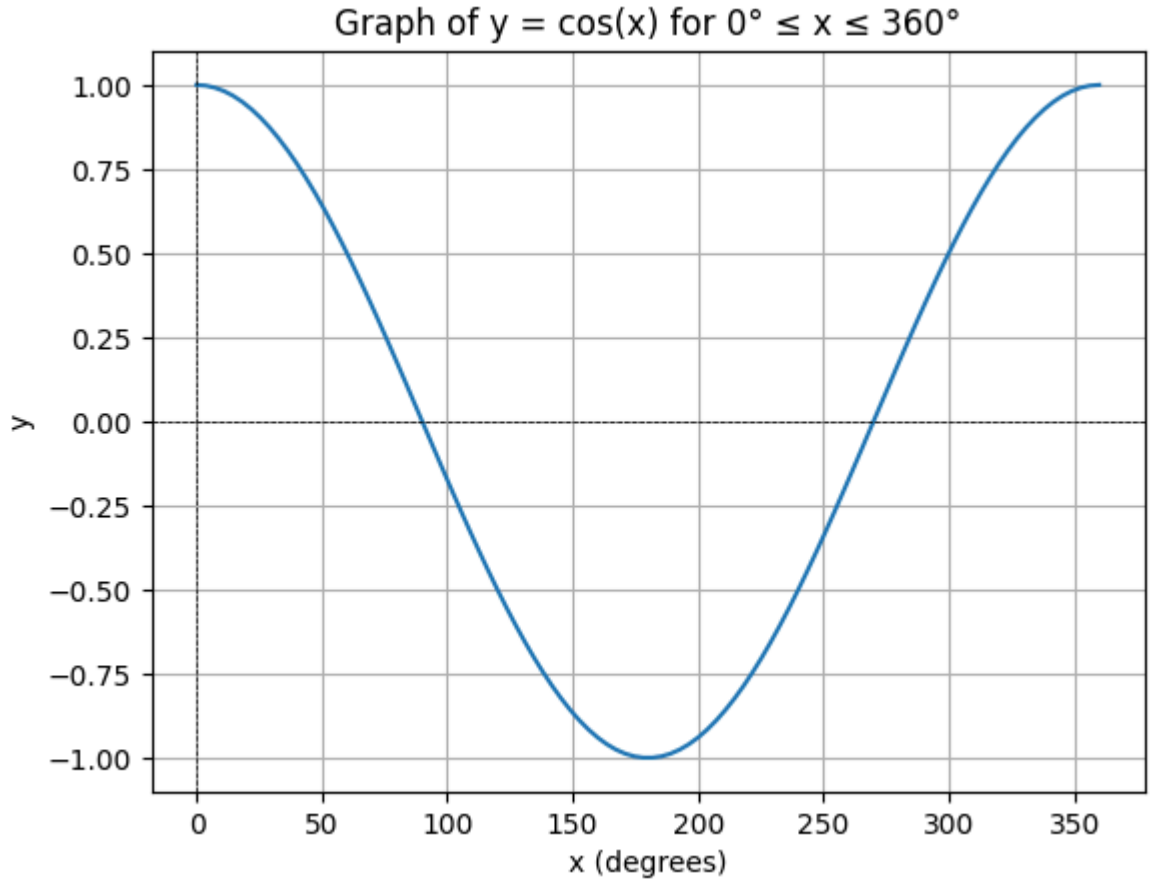


In [7]:
```
import numpy as np
import matplotlib.pyplot as plt

# Generate data for x values in degrees
x = np.linspace(0, 360, 100)

# Convert degrees to radians for the cosine function
x_radians = np.radians(x)

# Calculate y values for the function y = cos(1/2 * x)
y = np.cos(0.5 * x_radians)

# Plot the cosine function
```

```
plt.plot(x, y)

# Add title and axis labels
plt.title("Graph of y = cos(1/2 x) for 0° ≤ x ≤ 360°")
plt.xlabel("x (degrees)")
plt.ylabel("y")

# Display the plot
plt.grid()  # Optional: Add a grid for better visibility
plt.axhline(0, color='black', linewidth=0.5, ls='--')  # Optional: Add x-axis
plt.axvline(0, color='black', linewidth=0.5, ls='--')  # Optional: Add y-axis
plt.show()
```



In [9]:
```
import numpy as np
import matplotlib.pyplot as plt

# Generate data for x values in degrees
x = np.linspace(0, 360, 100)

# Convert degrees to radians for the cosine function
x_radians = np.radians(x)

# Calculate y values for the function y = cos(1/2 * x)
y = np.cos(1 * x_radians)

# Plot the cosine function
plt.plot(x, y)

# Add title and axis labels
plt.title("Graph of y = cos(x) for 0° ≤ x ≤ 360°")
plt.xlabel("x (degrees)")
plt.ylabel("y")

# Display the plot
plt.grid()  # Optional: Add a grid for better visibility
plt.axhline(0, color='black', linewidth=0.5, ls='--')  # Optional: Add x-axis
plt.axvline(0, color='black', linewidth=0.5, ls='--')  # Optional: Add y-axis
plt.show()
```


Graph of y = cos(x) for 0° ≤ x ≤ 360°
1.00
0.75
0.50
0.25
0.00
−0.25
−0.50
−0.75
−1.00
y
0
50
100
150
200
250
300
350
x (degrees)

In [ ]:

In [ ]: